

Interrelations between principals' risk of burnout profiles and proactive self-regulation strategies

Lotta Tikkanen, *University of Helsinki*; Kirsi Pyhältö, *University of Oulu*; Janne Pietarinen, *University of Eastern Finland*; Tiina Soini, *University of Tampere*

Abstract School leadership is a demanding job. Those involved in school leadership have shown to experience high levels of work stress that may, if prolonged, result in burnout. The purpose of this study was to examine school leaders' risks of burnout in terms of work stress and burnout symptoms, and their relationship with proactive self-regulation strategies. The participants consisted of 420 school principals and teachers with leadership duties (henceforth: principals). The survey data consisted of Likert-type statements and were analysed by hierarchical and K-means cluster analysis, and one-way analysis of variances. The results suggested that principals experience relatively low levels of work stress and burnout, and utilise several proactive self-regulation strategies. On the basis of cluster analysis, four *risk of burnout profiles* were identified. The profiles differed from each other in terms of proactive self-regulation strategies. The use of these strategies was related to a reduced risk of burnout.

Keywords Burnout, principal, proactive self-regulation strategies, school leadership

1 Introduction

The well-being of principals and teachers contributing to school leadership is a central determinant in school development, teachers' well-being and students' performance (Bakker et al. 2005; Kyriacou, 2001; Pas et al. 2012; Skaalvik and Skaalvik 2011; Soini et al. 2010; Van der Merwe and Parsotam 2012). Previous studies have shown that principals experience high levels of work stress that may, if prolonged, result in burnout (Borg and Riding 1993; Boyland 2011; Friedman 2002; Johnson et al. 2005; Van der Merwe and Parsotam 2012; Vuohijoki 2006). Principals and teachers'

work stress and burnout stem from various aspects of the school context (Borg and Riding 1993; Grayson and Alvarez 2008; Kyriacou 2011). School reforms and development work may also challenge the occupational well-being of those working in school leadership (e.g. Lasky 2005; McCormick et al. 2005; Tucker 2010).

Prior research into the strategies used to cope with work stressors show that the using these strategies significantly regulates the experience of burnout (Pietarinen et al. 2013a; Dicke et al. 2015; Laugaa et al. 2008; Salkovsky et al. 2015). However, the focus of studies concerning principals' stress and burnout has been on the working conditions that are likely to cause work stress and burnout (Borg and Riding 1993; Boyland 2011; Friedman 2002; Van der Merwe and Parsotam 2012; Whitaker 1996) rather than on the use of strategies. Moreover, the research on principals' ways of coping with work stressors has focused heavily on reactive coping strategies and their effectiveness (Allison 1997; Austin et al. 2005; Mearns and Cain 2003; Van der Merwe and Parsotam 2012). However, little is known about proactive self-regulation strategies, i.e. putting effort into changing the work environment so that potential stress can be avoided or diminished (Aspinwall and Taylor 1997; Greenglass and Fiskensbaum 2009; Greenglass et al. 1999), utilised by those contributing to school leadership. In addition, studies on burnout, including that of principals, have mainly relied on variable-based approaches rather than exploring differences between individuals (Boyland 2011; Friedman 2002; Hultell et al. 2013). Accordingly, this study aims to advance the understanding of the interrelations between experienced work stress, burnout, and proactive self-regulation strategies among principals and teachers with leadership duties by using a profile-based approach.

2 Theoretical framework

2.1 Work stress among school principals

School leadership is a demanding task, and the majority of school principals experience increased levels of work stress (Boyland 2011; Van der Merwe and Parsotam 2012; Vuohijoki 2006). Work stress refers to negative, inconvenient emotions such as anger, anxiety, tension, frustration, or depression caused by some aspect of work (Kyriacou 2001). Accordingly, school principals' work stress is characterised by experienced tension, restlessness, nervousness, or anxiety (Boyland 2011; Elo et al. 2003; Friedman 2002).

Prior research on principals' stress has identified several reasons for their work stress. For example, fast pace, external pressures and increased responsibilities are significant antecedents for school principals' work stress (Boyland 2011; Earley and Bubb 2013; Tucker 2010). Work overload, in terms of both quantity and quality, is also a predictor of school principals' work stress (Boyland 2011; Friedman 2002; Poirel et al. 2012; Van der Merwe and Parsotam 2012). Work stress among school principals has also been associated with teachers' low performance (Friedman 2002) and problems in interaction with pupils' parents (Combs et al. 2009; Friedman 2002; Van der Merwe and Parsotam 2012). Findings concerning the role of the pupils as stressors are, however, more ambiguous. Accountability for student achievements seems to be a significant stressor (Boyland 2011; Combs et al. 2009), whereas students or their learning results as such are not stressful from the principals' point of view (Friedman 2002). In the Finnish context, there is evidence of principals experiencing work stress due to highly fragmented work tasks, increasing responsibility for financial issues, and diminishing opportunities for pedagogical leadership (Karikoski 2009; Mustonen 2003;

Pesonen 2009). How work stress is perceived and expressed is not only dependent on circumstances but on the complex interaction between individual characteristics such as personality traits, values, skills, and the work environment (Ho 2015; Kyriacou 2001; meta-analysis by Montgomery and Rupp 2005; Pretsch et al. 2012; Törnroos et al. 2013).

Extensive, prolonged work stress has severe physiological, social and psychological consequences (Cox et al. 2000; Kivimäki et al. 2012; Laine et al. 2009). Evidence also shows a crossover effect from school principals' job-induced tension to teachers and vice versa (Westman and Etzion 1999). Principals' work stress can harm their emotional well-being, since work stress is associated with depression symptoms (Clays et al. 2007; Van der Merwe and Parsotam 2012).

2.2 School principals' burnout

Burnout develops gradually as a cause of extensive and prolonged work stress (Freudenberger 1974; Maslach 1993; Maslach and Jackson 1981). *Burnout* has three distinct symptoms: 1) exhaustion (Maslach et al. 2001), 2) cynicism (Hakanen et al. 2006; Maslach and Leiter 2008) and 3) professional inadequacy (Hakanen et al. 2006). Exhaustion is the core component of burnout (Maslach and Jackson 1981; Maslach et al. 2001). It refers to feelings of work overload, chronic fatigue, and lack of emotional energy (Maslach and Jackson 1981; Maslach et al. 2001). Cynicism is the interactive component of burnout (Hakanen et al. 2006; Maslach et al. 2001; Shirom 2003). It refers to negative attitudes towards one's job, colleagues, and customers (Maslach and Jackson 1981; Maslach et al. 2001). Cynicism also entails alienation from the job and its objects (Maslach et al. 2001; Maslach and Leiter 2008). Alienating oneself cognitively and emotionally from work functions as a coping mechanism for continuous work overload (Maslach et al. 2001). Professional inadequacy can be considered the

self-evaluation component of burnout (Maslach and Leiter 2008). It refers to one's own experience of professional inefficacy, or reduced professional accomplishment (Hakanen et al. 2006; Maslach and Leiter 2008). Although all these symptoms are necessary for understanding the development and nature of burnout, only one or two of them can lead to burnout (Maslach 1993; Maslach and Leiter 2008).

There is evidence that social interaction plays a central role in the emergence of burnout (Friedman 2002; Grayson and Alvarez 2008; Kokkinos 2007; Ozer 2013; Prieto et al. 2008; Pyhältö et al. 2011; Skaalvik and Skaalvik 2007, 2009, 2010, 2011). One study (Pyhältö et al. 2011) showed that Finnish teachers experience cynicism mostly with regard to their professional community. On the other hand, Friedman (2002) showed that the primary source of principals' cynicism was the weak performance of their teacher colleagues. Principals have shown to express cynical attitudes, especially towards their co-workers (Federici and Skaalvik 2012). Therefore, it is reasonable to assume that the professional community may be a central source of cynicism – not only for teachers, but for principals as well. Moreover, some evidence shows that teachers experience professional failures and feelings of inadequacy, mostly in teacher–pupil interaction (Pyhältö et al. 2011), whereas information about the sources of principals' professional inadequacy is scarce. Therefore, it is possible that principals experience professional inadequacy mainly in contexts other than principal–pupil interaction.

Burnout may have severe consequences for the individual, the professional community and pupils (Hakanen et al. 2006; Maslach and Jackson 1981; Noworol et al. 1993, Shirom 2003; Weisberg and Sagie 1999). At the individual level, burnout is related to mental and physical illnesses (Ahola and Hakanen 2007; Toppinen-Tanner et al. 2005, 2009). Teachers suffering from burnout symptoms are more likely to end up being sick when facing work overload than teachers without burnout symptoms (Hakanen et al. 2006). Burnout is also related to poor atmosphere characterised by, for example, increased risk of personal conflicts within the professional community, lower

performance, and reduced organisational commitment (Hakanen et al. 2006; Maslach et al. 2001; Noworol et al. 1993). Burnout is associated with teachers being less able and willing to put effort into furthering the basic mission of the school (Hakanen et al. 2006). It is also related to withdrawal behaviour such as being away from work, considering leaving the profession and actual turnover (Federici and Skaalvik 2012; Maslach et al. 2001; Schaufeli and Bakker 2004; Skaalvik and Skaalvik 2011; Weisberg and Sagie 1999).

Although principals' work is demanding and poses risks for burnout, not all principals experience burnout (Combs et al. 2009). Given that work stress and burnout are related to the school context as well as to individual factors in many ways (Friedman 2002; Gmelch and Gates 1997; Grayson and Alvarez 2008; Kokkinos 2007; Montgomery and Rupp 2005; Prieto et al. 2008; Pyhältö et al. 2011; Skaalvik and Skaalvik 2007, 2009, 2010, 2011; Törnroos et al. 2013), we presume that experiences of work stress and burnout have individual differences, i.e. not every principal feels the same amount of work stress and burnout in the same working context. One reason behind these individual differences may be the set of strategies that principals utilise to manage their stressors.

2.3 School principals' proactive self-regulation strategies

Principals and teachers can adopt strategies that help them cope with demanding situations and buffer the effects of work stress (Allison 1997; Pietarinen et al. 2013a; Pyhältö et al. 2011). The strategies learned and used by principals differ in terms of reactivity and proactivity. When facing potentially stressful situations, principals can use reactive coping strategies, i.e. they can react to the stressor by regulating their feelings or altering the situation so that the stress is diminished (Lazarus and Folkman 1984). There is evidence that principals do not use passive coping strategies, but instead

actively deal with challenges (Poirel et al. 2012). In addition, principals have been shown to regulate negative emotional reactions and take a positive point of view when facing problems (Nokelainen et al. 2007; Poirel et al. 2012). This implies that principals may prefer other types of strategies to reduce and buffer their work stress. They can, for instance, employ proactive strategies – they can put their efforts into changing the work environment in a way that helps avoid or diminish potential stress (Aspinwall and Taylor 1997; Greenglass and Fiskebaum 2009; Greenglass et al. 1999; Kyriacou 2001; Salkovsky et al. 2015; Verešová and Malá 2012). Proactive strategies are shown to be effective at regulating work stress (Aspinwall and Taylor 1997; Austin et al. 2005). With proactive strategies, it is possible to save resources and have more opportunities to act, because the stressors are noticed before they affect the individual or the work community (Aspinwall and Taylor 1997; Greenglass and Fiskebaum 2009).

Proactive self-regulation strategies can be used to buffer stressors (Greenglass et al. 1999). In practice, these strategies can include better planning, searching for new information, learning new skills, and reducing work tasks that feel burdensome (Kyriacou 2011; Poirel et al. 2012; Salkovsky et al. 2015). The use of proactive strategies has shown to be beneficial for reducing work stress and burnout (Allison 1997; Pietarinen et al. 2013a; Soini et al. 2010; Verešová and Malá 2012). Proactive strategies are related to lower levels of stress among teachers and principals (Allison 1997; Verešová and Malá 2012). In addition, proactive self-regulation strategies have been shown to diminish levels of exhaustion (Dicke et al. 2015; Pietarinen et al. 2013a) and other burnout symptoms among teachers (Pietarinen et al. 2013a).

Despite the well-recognised assets of proactive self-regulation strategies, very little information is available on how proactive self-regulation strategies are associated with work stress and burnout among school principals.

3 Aim of the study

The study aims to gain a better understanding of the interrelations between school principals' work stress, burnout and proactive self-regulation strategies. The following research questions were addressed:

1. To what extent do principals experience work stress and burnout symptoms? To what extent do they use proactive self-regulation strategies? How are work stress, burnout symptoms and proactive strategies related to each other?
2. What kinds of profiles can classify the participants according to their levels of work stress and burnout symptoms (i.e. *risk of burnout profiles*)?
3. How do these *risk of burnout profiles* differ in terms of proactive self-regulation strategies?

4 Methods

4.1 A Finnish comprehensive school as a principal's work environment

The Finnish education system consists of one year of pre-primary education and nine years of comprehensive schooling. Children start pre-primary education at the age of six and usually end basic education at the age of sixteen. Education is publicly financed. The Finnish education system has a number of distinctive features. For instance, there is no ability tracking system or other structures that separate students early on into academic or vocational education. Accountability systems are flexible, and emphasise trust in individual schools (Aho et al. 2006).

The system in Finland is administrated on different levels. The Ministry of Education and Culture is responsible for the education policy, while the Finnish National Board of Education is in charge of the implementation of the policy aims. On a local level, municipalities or joint municipal authorities are responsible for local administration. Municipalities are allowed to delegate the decision-making power to the schools. Typically, principals are responsible for school-level operations, such as budget management and recruitment of teachers and other school staff. School leadership is usually distributed at the school level; in addition to principals there may be assistant principals and management teams consisting of teachers in charge of school leadership.

Principals are required to have a higher academic degree and teaching qualifications as well as adequate teaching experience and a certificate in educational administration.

4.2 Participants

A total of 2310 comprehensive school teachers completed the survey. A probability sampling method ($N = 6000$) was utilised. The criteria for selecting the participants for this particular study were that they all had responsibilities in school leadership. The study participants consisted of school principals, assistant principals and teachers with leadership responsibilities ($N = 420$) (henceforth: principals). The mean age of the respondents was 47.2 years ($SD = 9.0$; *Min/Max*: 27/66 years). The majority of the participants were women ($n = 299$, 71%). The principals were at different phases of their careers: their work experience varied between three and 45 years ($M = 20.1$ years, $SD = 9.2$ years).

4.3 Measures

The scales for the study were developed by the authors (Pietarinen et al. 2013a, 2013b). Three scales were used to measure school principals' *burnout* (11 items) (Pietarinen et al. 2013b), *work stress* (one item) (Elo et al. 2003) and *proactive self-regulation strategies* (six items) (Pietarinen et al. 2013a). The scales are shown in Appendix 1.

The *burnout* scale is part of the Socio-contextual Teacher Burnout Scale (STBI) (Pietarinen et al. 2013b). It is based on Maslach and Jackson's (1981) burnout scale and is constructed by specifying the social contexts of experienced cynicism and professional inadequacy (Pyhältö et al. 2011). The scale consists of 11 items measuring three factors of socio-contextual burnout: a) exhaustion (four items), b) cynicism towards the teacher community (four items), and c) inadequacy in school principal–pupil interaction (three items). The Cronbach alpha coefficient for exhaustion was .75 and for cynicism towards the teacher community .75. The alphas indicated acceptable reliability (Nunnally and Bernstein 1994, 264–266). The Cronbach alpha for inadequacy in school principal–pupil interaction was .68, which was considered sufficient.

The *proactive self-regulation strategy* scale consists of six items measuring school principals' proactive self-regulation strategies. It was based on research evidence showing that teachers can learn and use functional strategies for reducing exhaustion (Pyhältö et al. 2011). The Cronbach alpha coefficient for the proactive self-regulation strategies was .87, indicating good reliability (Nunnally and Bernstein 1994, 264–266).

All items were rated on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree).

The *work stress* scale was a single-item scale developed by Elo et al. (2003). The item was rated on a 10-point scale ranging from 1 (not at all) to 10 (very much).

4.4 Data analysis

The analysis was carried out using IBM SPSS Statistics 22.

4.4.1 Descriptive statistics

In order to examine principals' experienced work stress and burnout symptoms, means and standard deviations were calculated. The relationships between them were examined using Spearman's rank correlation coefficients.

4.4.2 Risk of burnout profiles

The cluster analysis was used to examine the principals' *risk of burnout profiles*. Standardised values for work stress, exhaustion, cynicism and professional inadequacy were used in cluster analysis. A hierarchical cluster analysis (Hair et al. 2014), selecting the squared Euclidean distance as a similarity measure, was carried out to determine the number of clusters and the cluster centres. Ward's method (see Hair et al. 2014) was used to form the initial clusters. The number of clusters was not restricted. On the basis of the agglomeration schedule, a four-cluster solution was selected. When the number of clusters was selected, K-means cluster analysis (Hair et al. 2014) was used to determine the final clusters. The cluster centres that were defined at the earlier stage were selected as starting points for K-means cluster analysis. Cross-tabulation was carried out for the cluster solutions defined by hierarchical cluster analysis and K-means cluster analysis to confirm the stability of the cluster solution. Eighty per cent of the cases were placed in the same clusters with both clustering methods, which was considered sufficient. Discriminant function analysis (Tabachnick and Fidell 2014) using a stepwise method was carried out to confirm the clusters in a split half sample. Cross-validation was performed on the holdout sample.

4.4.3 Differences in proactive self-regulation strategies

One-way analysis of variances (Hair et al. 2014) was carried out to examine whether there were differences between the proactive self-regulation strategies of the *risk of burnout profiles*. Levene's test for equality of variances was used. In the pairwise comparisons, Tamhane's T2 test was used, since the variances differed statistically significantly from each other. The eta squared was computed to assess effect size.

5 Results

5.1 Work stress, burnout symptoms and proactive self-regulation strategies of the principals

The results showed that principals experienced relatively low levels of work stress and burnout. Principals reported slightly higher levels of exhaustion than other burnout symptoms. On average, principals reported using quite a lot of proactive self-regulation strategies. Standard deviations were relatively large on all these variables. The means and standard deviations of the principals' work stress, burnout symptoms and proactive self-regulation strategies are shown in Table 1.

[Insert Table 1.]

Further investigation into the correlations showed that work stress was positively related to exhaustion ($r_s = .672$), and professional inadequacy was related to increased levels of exhaustion ($r_s = .506$). Proactive self-regulation strategies were most strongly related to low levels of exhaustion ($r_s = -.597$) and work stress ($r_s = -.524$), but reduced levels of cynicism and professional inadequacy were also associated. All these correlations were

statistically significant ($p < .001$). The correlations between the variables are shown in Table 2.

[Insert Table 2.]

5.2 Risk of burnout profiles

Four profiles were identified on the basis of the cluster analysis. The profiles were: 1) *low risk of burnout*, 2) *moderate risk of burnout*, 3) *increased risk of burnout* and 4) *high risk of burnout*. The principals were distributed among the profiles in the following manner: 35% of the principals were labelled *low risk of burnout* ($n = 147$), 25% *moderate risk of burnout* ($n = 103$), 27% *increased risk of burnout* ($n = 114$), and 13% *high risk of burnout* ($n = 55$). The profiles differed statistically significantly on almost all clustering variables, with effect sizes (η^2) ranging from .48 to .68, indicating large effects (Cohen 1988). The mean scores of work stress and burnout symptoms in different profiles are shown in Table 3.

[Insert Table 3.]

The principals with the *low risk of burnout* profile scored lowest for all burnout symptoms and work stress. The principals with the *moderate risk of burnout* profile scored second highest on cynicism and professional inadequacy and second lowest on exhaustion and work stress. According to the discriminant function analysis, high cynicism and low work stress were the defining characteristics of this profile. Principals with the *increased risk of burnout* profile had high scores in work stress and quite high scores in exhaustion. Even so, they scored second lowest on professional inadequacy and cynicism. Principals with the *high risk of burnout* profile scored the

highest on all burnout symptoms and work stress. High work stress characterised this profile. There were no statistically significant differences in terms of professional inadequacy between the *moderate risk of burnout* and the *increased risk of burnout* profiles, or in terms of work stress between the *high risk of burnout* and the *increased risk of burnout* profiles.

5.3 Differences between proactive self-regulation strategies

The differences between the proactive self-regulation strategies of all risk of burnout profiles were statistically significant. $F(3; 415) = 54.21, p < .001$. The effect size (η^2) for proactive self-regulation strategies was .28, which indicated a large effect (Cohen, 1988). Table 3 shows the mean scores of proactive self-regulation strategies in different profiles. Pairwise comparisons with Tamhane's T2 tests showed that principals with the *low risk of burnout* profile reported the strongest proactive self-regulation strategies, and principals with the *moderate risk of burnout* profile reported the second strongest proactive self-regulation strategies. Conversely, the weakest proactive self-regulation strategies were reported by principals with the *high risk of burnout* profile and principals with the *increased risk of burnout* profile.

6 Discussion

6.1 Limitations of the study and directions for future research

The response rate was moderate (39%). The representativeness of the sample, which is more important than the response rate (Krosnick 1999), was, however sufficient.

As a cross-sectional design was used, the relations between the variables cannot be interpreted causally. Further research is needed to determine the possible causal relations between the variables.

The Socio-contextual Teacher Burnout Scale used in this study was originally developed to measure teachers' socio-contextual burnout (Pietarinen et al. 2013b). Based on the internal consistencies of the scales, the inventory seemed to work well, especially on exhaustion and cynicism towards the professional community. The inventory did not work as well on professional inadequacy in principal–pupil interaction, although the Cronbach alpha was considered sufficient. This may indicate that interaction with pupils is not the main source of professional inadequacy for school principals. Therefore, further studies are recommended to determine the primary contexts of principals' professional inadequacy.

Cluster analysis can be considered as heuristic and subjective method (Clatworthy et al. 2005; Hair et al. 2014). In this study, a four-cluster solution seemed to work well, since the clusters were theoretically consistent. In addition, the clusters mostly differed statistically significantly in terms of work stress, burnout symptoms and proactive self-regulation strategies.

6.2 Conclusions

This study explored school principals' risk of burnout profiles and proactive self-regulation strategies, and the interrelations between them. The results suggested that principals in this study experienced quite low levels of work stress and burnout symptoms. In addition, there were more principals in the *low risk of burnout* profile than in the other profiles. This is somewhat surprising, considering that prior research has shown that a significant number of principals experience high pressures caused by, for example, work overload and degree of responsibility (Boyland 2011; Friedman

2002; Mustonen 2003; Tucker 2010; Van der Merwe and Parsotam 2012; Vuohijoki 2006). One possible explanation could be the flexible accountability structures of the Finnish education system (Aho et al. 2006), since accountability has been recognised as a central source of principals' work stress in other contexts (Boyland 2011; Combs et al. 2009).

The relatively low levels of work stress and burnout symptoms of the principals may also be caused by the rather extensive use of proactive self-regulation strategies. The reported use of proactive self-regulation strategies was related to lower levels of burnout symptoms and work stress, which is in line with previous research (Allison 1997; Dicke et al. 2015; Pietarinen et al. 2013a; Verešová and Malá 2012).

The proactive self-regulation strategies used by principals were related to a lower risk of burnout. There was an association between strategy use and low levels of exhaustion and work stress. The results indicated that the use of proactive self-regulation strategies buffers exhaustion and work stress among principals. The buffering effect seems to be much less effective on cynicism, since proactive self-regulation strategies were frequently used by principals in the *moderate risk of burnout* profile, who scored second highest on cynicism. This result is in line with previous research. Allison (1997) and Verešová and Malá (2012) showed that proactive self-regulation strategies used by teachers and principals are related to lower levels of work stress. Furthermore, Pietarinen et al. (2013a) found that proactive self-regulation strategies are related to lower levels of burnout symptoms among teachers, although the effect on cynicism was weaker. The researchers argue that the constant regulation of one's own behaviour is not an effective way of reducing cynicism among teachers. The results of our study indicate that this may also be true among principals.

The results implied that principals' proactive self-regulation strategies provide a significant buffer against the effects of work stressors, especially exhaustion and work stress. In other words, being able to deal with the increasing demands of the work of a

principal seems to require constant self-regulation. The result implies that learning proactive self-regulation strategies, for example, learning to set limits to work assignments, is a functional way to reduce burnout among principals. This is also supported by the previous literature on principals' burnout (Boyland 2011; Dicke et al. 2015). However, mere self-regulation is not effective for buffering cynicism. As cynicism towards the professional community can be detrimental for school development, which requires trust and willingness to experiment with pedagogical practices, it would be advantageous to encourage the use of different kinds of strategies to proactively manage work stressors (e.g. Allison 1997; Austin et al. 2005; Gmelch 1988), especially cynicism.

The success of a school's development is highly dependent on the well-being of the principals and teachers with leadership duties that contribute to development work. Changes in a school pose challenges for the well-being of teachers and principals (Lasky 2005; McCormick et al. 2005; Tucker 2010). Therefore, it is particularly important to investigate the well-being of those with school leadership responsibilities, especially principals, in the context of school development work.

References

- Aho, E., Pitkänen, K. & Sahlberg, P. (2006). Policy development and reform principals in basic and secondary in Finland since 1968. *Education Working Paper Series* 2. World Bank, Washington, DC.
- Ahola, K., & Hakanen, J. (2007). Job strain, burnout, and depressive symptoms: A prospective study among dentists. *Journal of Affective Disorders*, 104(1–3), 103–110.
- Allison, D.G. (1997). Coping with stress in the principalship. *Journal of Educational Administration*, 35(1), 39–55.

- Aspinwall, L.G., & Taylor, S.E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin*, 121, 417–436.
- Austin, V., Shah, S., & Muncer, S. (2005). Teacher stress and coping strategies used to reduce stress. *Occupational Therapy International*, 12(2), 63–80.
- Bakker, A., Demerouti, E., & Euwema, M.C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170–180.
- Borg, M.G., & Riding, R.J. (1993). Occupational stress and job satisfaction among school administrators. *Journal of Educational Administration*, 31(1), 4–21.
- Boyland, L. (2011). Job stress and coping strategies of elementary principals: a statewide study. *Current Issues in Education*, 14(3), 1–11.
- Clatworthy, J., Buick, D., Hankins, M., Weinman, J., & Horne, R. (2005). The use and reporting of cluster analysis in health psychology: a review. *British Journal of Health Psychology*, 10, 328–358.
- Clays, E., De Bacquer, D., Leynen, F., Kornitzer, M., Kittel, F., & De Backer, G. (2007). Job stress and depression symptoms in middle-aged workers—prospective results from the Belstress study. *Scandinavian Journal of Work, Environment & Health*, 33(4), 252–259.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2. ed.). Hillsdale (NJ): Lawrence Erlbaum.
- Combs, J., Edmonson, S. L., & Jackson, S. H. (2009). Burnout among elementary school principals. *AASA Journal of Scholarship and Practice*, 5(4), 10–15.
- Cox, T., Griffiths, A., & Rial-González, E. (2000). *Research on work-related stress*. European agency for safety and health at work. Luxembourg: Office for Official Publications of the European Communities.

- Dicke, T., Elling, J., Schmeck, A., & Leutner, D. (2015). Reducing reality shock: The effects of classroom management skills training on beginning teachers. *Teaching and Teacher Education*, 48, 1–12.
- Earley, P., & Bubb, S. (2013). A day in the life of new headteachers: Learning from observation. *Educational Management Administration & Leadership*, 41(6), 782–799.
- Elo, A., Leppänen, A., & Jahkola, A. (2003). Validity of a single-item measure of stress symptoms. *Scandinavian Journal of Work, Environment & Health*, 29(6), 444–451.
- Federici, R. A. & Skaalvik, E. M. (2012). Principal self-efficacy: Relations with burnout, job satisfaction and motivation to quit. *Social Psychology of Education: An International Journal*, 15(3), 295–320.
- Freudenberger, H. J. (1974). Staff Burn-out. *Journal of Social Issues*, 30(1), 159–165.
- Friedman, I. A. (2002). Burnout in school principals: Role related antecedents. *Social Psychology of Education: An International Journal*, 5(3), 229–251.
- Gmelch, W. H. (1988). Educators' response to stress: Towards a coping taxonomy. *Journal of Educational Administration*, 26(2), 222–231.
- Gmelch, W. H., & Gates, G. (1997). The impact of personal, professional and organizational characteristics on administration burnout. *Journal of Educational Administration*, 32(2), 146–159.
- Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education*, 24(5), 1349–1363.
- Greenglass, E., & Fiskebaum, L. (2009). Proactive coping, positive affect, and well-being. Testing for mediation using path analysis. *European Psychologist*, 14(1), 29–39.

- Greenglass, E., Schwarzer, R., Jakubiec, D., Fiskensbaum, L., & Taubert, S. (1999, July). The Proactive Coping Inventory (PCI): A multidimensional research instrument. (Paper presented at the 20th International Conference of the Stress and Anxiety Research Society, Cracow, Poland). Available at: <http://estherg.info.yorku.ca/files/2014/09/pci.pdf>. Accessed 8 May 2017.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W.B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495–513.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis* (7. ed., Pearson new international edition). Harlow: Pearson.
- Ho, S. K. (2016). Relationships among humour, self-esteem, and social support to burnout in school teachers. *Social Psychology of Education: An International Journal*, 19(1), 41–59.
- Hultell, D., Melin, B., & Gustavsson, P. (2013). Getting personal with teacher burnout: A longitudinal study on the development of burnout using a person-based approach. *Teacher and Teacher Education*, 32, 75–86.
- Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology*, 20(2), 179–187.
- Karikoski, A. (2009). *Aika hyvä rehtoriksi. Selviääkö koulun johtamisesta hengissä?* (*Good enough as a principal—how to survive leading a school?*) PhD Thesis, University of Helsinki, Finland.
- Kivimäki, M., Nyberg, S. T., Batty, G. D., Fransson, E. I., Heikkilä, K., Alfredsson, L., et al. (2012). Job strain as a risk factor for coronary heart disease: A collaborative meta-analysis of individual participant data. *The Lancet*, 3(9852), 1491–1497.
- Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, 77(1), 229–243.

- Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology*, 50, 537–567.
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, 53, 28–35.
- Laine, S., Gimeno, D., Virtanen, M., Oksanen, T., Vahtera, J., Elovainio, M., et al. (2009). Job strain as a predictor of disability pension: The Finnish public sector study. *Journal of Epidemiology and Community Health*, 63(1), 24–30.
- Lasky, S. (2005). A Sociocultural approach to understanding teacher identity, agency and professional vulnerability in a context of secondary school reform. *Teaching and Teacher Education*, 21, 899–916.
- Laugaa, D., Rascle, N., & Bruchon-Schweitzer, N. (2008). Stress and burnout among French elementary school teachers: a transactional approach. *European Review of Applied Psychology*, 58, 241–251.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer Publishing Company.
- McCormick, J., Ayres, P. L., & Beechey, B. (2005). Teaching self-efficacy, stress and coping in a major curriculum reform. Applying theory to context. *Journal of Educational Administration*, 44(1), 53–70.
- Maslach, C. (1993). Burnout. A multidimensional perspective. In: W. B. Schaufeli, C. Maslach & T. Marek (Eds.) *Professional burnout: Recent developments in theory and research* (pp. 19–32). Washington DC: Taylor & Francis.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, 2(2), 99–113.
- Maslach, C., & Leiter, M. P. (2008). Early predictors of job burnout and engagement. *Journal of Applied Psychology*, 93(3), 498–512.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.

- Mearns, J., & Cain, J. E. (2003). Relationships between teachers' occupational stress and their burnout and distress: roles of coping and negative mood regulation expectancies. *Anxiety, Stress, & Coping: An International Journal*, 16(1), 71–82.
- Montgomery, C. & Rupp, A. R. (2005). A Meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education*, 28(3), 461–488.
- Mustonen, K. (2003). *Mihin rehtoria tarvitaan? Rehtorin tehtävät ja niiden toteutuminen Pohjois-Savon yleissivistävissä kouluissa (Why do we need a principal? The importance and realization of the duties of the principals in Finnish comprehensive and upper secondary schools)*. PhD Thesis, University of Oulu, Finland.
- Nokelainen, P., Ruohotie, P. & Tirri, K. (2007). Finnish Urban School Teacher's Evaluations on Principals Emotional Leadership Competencies. *Proceedings of the National Centre for Research on Europe 2007 conference*. University of Canterbury, Christchurch, New Zealand. Available at: http://www15.uta.fi/arkisto/aktk/projects/usis/2007_06_NCRE/NCRE2007_PN_PR_K_T.pdf. Accessed 2 December 2014.
- Noworol, C., Żarczyński, Z., Fafrowitz, M., & Marek, T. (1993). Impact of professional burnout on creativity and innovation. In: W. B. Schaufeli, C. Maslach & T. Marek (Eds.) *Professional burnout: Recent developments in theory and research* (pp. 163–175). Washington DC: Taylor & Francis.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3. ed.) New York: McGraw-Hill.
- Ozer, N. (2013). Trust me, principal, or burn out! The relationship between principals' burnout and trust is students and parents. *Alberta Journal of Educational Research*, 59(3), 382–400.

- Pas, E. T., Bradshaw, C. P., & Hersfeldt, P. A. (2012). Teacher- and school-level predictors of teacher efficacy and burnout: Identifying potential areas for support. *Journal of School Psychology, 50*(1), 129–145.
- Pesonen, J. (2009). *Peruskoulun johtaminen – aikansa ilmiö (Comprehensive school leadership – phenomenon of its time)*. PhD Thesis, University of Joensuu, Finland.
- Pietarinen, J., Pyhältö, K., Soini, T., & Salmela-Aro, K. (2013a). Reducing teacher burnout: A socio-contextual approach. *Teaching and Teacher Education, 35*, 62–72.
- Pietarinen, J., Pyhältö, K., Soini, T., & Salmela-Aro, K. (2013b). Validity and reliability of the socio-contextual teacher burnout inventory (STBI). *Psychology, 4*(1), 73–82.
- Poirel, E., Lapointe, P. & Yvon, F. (2012). Coping with administrative constraints in Quebec school principals. *Canadian Journal of School Psychology, 27*(4), 302–318.
- Pretsch, J., Flunger, B., & Schmitt, M. (2012). Resilience predicts well-being in teachers, but not in teaching employees. *Social Psychology of Education: An International Journal, 15*(3), 321–336.
- Prieto, L. L., Soria, M. S., Martínez, I. M. & Schaufeli, W. (2008). Extension of the job demands-resources model in the prediction of burnout and engagement among teachers over time. *Psicothema, 20*(3), 354–360.
- Pyhältö, K., Pietarinen, J., & Salmela-Aro, K. (2011). Teacher-working-environment fit as a framework for burnout experienced by Finnish teachers. *Teaching and Teacher Education: An International Journal of Research and Studies, 27*(7), 1101–1110.

- Salkovsky, M., Romi, S. & Lewis, R. (2015). Teachers' coping styles and factors inhibiting teachers' preferred classroom management practice. *Teaching and Teacher Education*, 48, 56–65.
- Schaufeli, W. B. & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315.
- Shirom, A. (2003). Job-related Burnout: A Review. In J. C. Quick & L. E. Tetrick (Eds.) *Handbook of occupational health psychology* (pp. 245–264). Washington, D.C: American Psychological Association.
- Skaalvik, E. M. & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, 99(3), 611–625.
- Skaalvik, E. M. & Skaalvik, S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education*, 25(3), 518–524.
- Skaalvik, E. M. & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, 26(4), 1059–1069.
- Skaalvik, E. M. & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27(6), 1029–1038.
- Soini, T., Pyhältö, K., & Pietarinen, J. (2010). Pedagogical well-being: Reflecting learning and well-being in teachers' work. *Teachers and Teaching: Theory and Practice*, 16(6), 735–751.
- Tabachnick, B. G. & Fidell, L. S. (2014). *Using multivariate statistics* (6. ed., Pearson new international edition). Harlow: Pearson.
- Toppinen-Tanner, S., Ahola, K., Koskinen, A., & Väänänen, A. (2009). Burnout predicts hospitalization for mental and cardiovascular disorders: 10-year

- prospective results from industrial sector. *Stress & Health: Journal of the International Society for the Investigation of Stress*, 25(4), 287–296.
- Toppinen-Tanner, S., Ojajärvi, A., Väänänen, A., Kalimo, R., & Jäppinen, P. (2005). Burnout as a predictor of medically certified sick-leave absences and their diagnosed causes. *Behavioral Medicine*, 31(1), 18–32.
- Tucker, S. (2010). An investigation of the stresses, pressures and challenges faced by primary school head teachers in a context of organizational change in schools. *Journal of Social Work Practice: Psychotherapeutic Approaches in Health, Welfare and the Community*, 24(1), 63–74.
- Törnroos, M., Hintsanen, M., Hintsu, T., Jokela, M., Pulkki-Råback, L., Hutri-Kähönen, N., et al. (2013). Associations between five-factor model traits and perceived job strain: a population-based study. *Journal of Occupational Health Psychology*, 18(4), 492–500.
- Van der Merwe, H., & Parsotam, A. (2012). School principal stressors and a stress alleviation strategy based on controlled breathing. *Journal of Asian and African Studies*, 47(6), 666–678.
- Verešová, M., & Malá, D. (2012). Stress, proactive coping and self-efficacy of teachers. *Procedia - Social and Behavioral Sciences*, 55, 294–300.
- Vuohijoki, T. (2006). *Pitää vain selviytyä: Tutkimus rehtorin työstä ja työssä jaksamisesta sukupuolen ja virka-aseman suhteen tarkasteltuna (You just have to cope: the work and professional well-being of principals researched in relation to their sex and official position of authority)*. PhD Thesis, University of Turku, Finland.
- Weisberg, J., & Sagie, A. (1999). Teachers' physical, mental and emotional burnout: Impact on intention to quit. *The Journal of Psychology*, 133(3), 333–339.

- Westman, M. & Etzion, D. (1999). The crossover of strain from school principals to teachers and vice versa. *Journal of Occupational Health Psychology*, 4, 269–f278.
- Whitaker, K. S. (1996). Exploring the causes of principal burnout. *Journal of Educational Administration*, 34(1), 60–71.

MA Lotta Tikkanen is a doctoral student in the Faculty of Educational Sciences, University of Helsinki, Finland. Her doctoral dissertation focuses on school development and leadership, particularly on interrelation between learning and well-being in school reforms.

Dr Kirsi Pyhältö, Faculty of Educational Sciences, University of Oulu, and Centre for University Teaching and Learning, Faculty of Educational Sciences, University of Helsinki, Finland. Pyhältö is Research Director at the Research and Development Centre for University Pedagogy, University of Helsinki and Professor of Educational Science at the University of Oulu. Her research interests include learning, well-being and professional agency of in-service teachers. Pyhältö is Co-PI in the Learning and Development in School research group (www.learninginschool.fi) together with Tiina Soini and Janne Pietarinen.

Dr Janne Pietarinen, School of Applied Educational Science and Teacher Education, University of Eastern Finland, Finland. Pietarinen is Professor of teacher education at the School of Applied Educational Science and Teacher Education, University of Eastern Finland, and Adjunct Professor at the University of Tampere. His research interests are in educational transitions, pupil and teacher learning, and well-being in the context of sustainable school development. He is Co-PI in the Learning and Development in School research group (www.learninginschool.fi) together with Tiina Soini and Kirsi Pyhältö.

Dr Tiina Soini, School of Education, University of Tampere, Finland. Soini is Research Director at the School of Education, University of Tampere and Adjunct Professor at the University of Eastern Finland. Her research interests are in the learning and well-being of educational communities, with a special focus on teacher communities in comprehensive school. She is Co-PI in the Learning and Development in School

research group (www.learninginschool.fi) together with Kirsi Pyhältö and Janne Pietarinen.

Table 1. Descriptive statistics of the variables.

Variable	Number of items	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	Cronbach's alpha
Work stress	1	1	10	4.59	2.43	
Exhaustion	4	1	7	3.45	1.29	.745
Cynicism	4	1	7	2.51	1.15	.745
Professional inadequacy	3	1	6.67	2.56	1.15	.679
Proactive self-regulation strategies	6	1	7	5.11	1.07	.869

Table 2. Spearman's rank correlations between work stress, exhaustion, cynicism, professional inadequacy, and proactive self-regulation strategies.

	1.	2.	3.	4.
1. Work stress				
2. Exhaustion	.672			
3. Cynicism	.209	.331		
4. Professional inadequacy	.352	.506	.354	
5. Proactive self-regulation strategies	-.524	-.597	-.224	-.430

All correlations were statistically significant at $p < .001$ level

Table 3. Means, standard deviations and ANOVA results for profile differences on work stress, exhaustion, cynicism, professional inadequacy, and proactive self-regulation strategies.

	Low risk of burnout <i>n</i> = 147		Moderate risk of burnout <i>n</i> = 103		Increased risk of burnout <i>n</i> = 114		High risk of burnout <i>n</i> = 55				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	η^2
Work stress*	2.74	1.36	3.22	1.36	6.96 _a	1.39	7.11 _a	1.37	298.99	.000	.684
Exhaustion	2.41	.65	3.13	.90	4.32	.96	4.97	.99	175.19	.000	.559
Cynicism	1.64	.55	3.29	.83	2.18	.78	3.94	1.02	172.53	.000	.484
Professional inadequacy	1.73	.59	2.75 _b	.94	2.63 _b	.88	4.28	1.04	129.60	.000	.555
Proactive self- regulation strategies	5.71	.76	5.30	.89	4.66	.93	4.16	1.11	54.21	.000	.282

Means within a row sharing the same subscripts are not significantly different at the $p < .05$ level.

*Work stress was measured on a ten-point scale, while other variables were measured using seven-point scales.

Appendix 1 The scales. (Translated from Finnish)

Work stress

Stress means a situation in which a person feels tense, restless, nervous or anxious or is unable to sleep at night because his/her mind is troubled all the time. Do you feel this kind of work-related stress?

Response categories: (1) = not at all – very much = (10)

Burnout

Exhaustion:

Exh10: I often have to work too hard.

Exh11: The worries related to my work as a teacher keep occupying me during my free time.

Exh12: I feel burnt out.

Exh13: With this work pace I don't think I'll make it to the retiring age.

Cynicism towards teacher community:

Cyn21: I'm disappointed in our teacher community's ways of handling our shared affairs.

Cyn22: In spite of several efforts to develop the working habits of our teacher community they haven't really changed.

Cyn23: I often feel like an outsider in my work community.

Cyn24: The idea of advancing our work community feels distant.

Inadequacy in teacher–pupil interaction:

Inad31: The challenging pupils make me question my abilities as a teacher.

Inad32: I often feel I have failed in my work with pupils.

Inad33: Dealing with problem situations considering my pupils often upsets me.

Response categories: (1) = I disagree completely – I agree completely = (7)

Proactive self-regulation strategies

Stra11: I'm able to control my work pace in the busy school work schedule.

Stra12: I can set limits to my work assignments.

Stra13: I know when it's time for me to adjust my work pace.

Stra14: It's possible to learn to adjust the way you manage your work strain.

Stra15: I have confidence in my ability to survive the challenges in my work.

Stra16: I'm able to influence my own work strain.

Response categories: (1) = I disagree completely – I agree completely = (7)